L 34922-65

ACCESSION NR: AT5006116

strontium entering the stomach was deposited in the skeleton. The accumulation multiplicity factor for Sr^{90} in the skeleton of newborn calves averaged 1.69, with fluctuations from 0.63 to 2.71. The maximum value of the accumulation multiplicity factor (100.5-121.0) was found during the 9th month of life of the calf, after which this value decreased to 70-73.2 by the 18th month. The factor of discrimination between strontium and calcium in the mother fodder--fetus skeleton system was 0.259 during the second half of pregnancy. During the first 9 months the discrimination between strontium and calcium in the fodder--skeleton system fluctuated from 0.83 to 1.05. From 9 to 18 months of age it dropped to 0.204. Orig. art. has 3 tables.

ASSOCIATION: none

SUBMITTED: 10Apr64 ENCL: 00 SUB CODE: LS

NO REF SOV: 000 OTHER: 000

Card 2/2

L 34928-65

ACCESSION NR: AT5006118 S/0000/64/000/000/0147/0153

AUTHOR: Burov, N. I.; Buldakov, L. A.

TITLE: Penetration of strontium-90 through the placental barrier of sheep

SOURCE: Raspredeleniye, biologicheskoye deystviye, uskoreniye vyvedeniya radioaktivnykh izotopov (Distribution, biological effect, acceleration of the excretion of radioactive isotopes); sbornik rabot. Moscow, Izd-vo Meditsina, 1964, 147-153

TOPIC TAGS: fetus, strontium-90, pregnancy, radioisotope, bone, placenta, radioactivity

ABSTRACT: The amount of Sr^{90} passing from the mother to the fetus varied with the time of pregnancy and method of administering the isotope. Some 10-12 times more strontium was deposited in the newborn lamb after intravenous injection of the isotope than after oral administration. After 30, 90, 120, 136, and 152 days of pregnancy, 0.207, 1.23, 6.72, 9.41, and 12.13%, respectively, of the strontium injected into the blood of the mother was deposited in the skeleton of the fetus. After a single oral administration 500-510 and 50-100 days before pregnancy and on the 120th, 136th, and 152nd days of pregnancy, 0.0144 ± 0.0029%, 0.082 ± 0.003%, 0.876%, 1.10%, and 0.509% of the dose was deposited in the skeleton. The amount of Sr^{90}

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L 34928-65

ACCESSION NR: AT5006118

passing from the mother to the fetus during the entire period of pregnancy in the case of chronic administration of the isotope varied with the length of the experiment. The longer the animal received strontium before the next pregnancy, the greater the amount of the isotope that entered the fetus. Strontium was distributed unevenly in the skeleton of the baby lamb, and it too varied with the time of pregnancy. After chronic uptake of the isotope and when it was administered before or early in pregnancy, the highest concentrations were found in the skull bones, mandible, and diaphysis, and when administered later, in the metaphysis. Orig. art. has 5 tables.

ASSOCIATION: none

SUBMITTED: 10Apr64 ENCL: 00 SUB CODE: LS

NO REF SOV: 000 OTHER: 000

Card 2/2

L 34176-65 EWT(1)/EWG(v)/EEC(t)/EEC-4 Pe-5/Pq-4 GW
ACCESSION NR: AR5004834 S/0269/64/000/012/0053/0053

SOURCE: Ref. zh. Astronomiya. Otd. vyp., Abs. 12.51.424

AUTHORS: Ivanchuk, V. I.

TITLE: Broadening of polar rays with altitude and the magnetic field in the corona

CITED SOURCE: Solnechnyye dannyye, no. 11, 1963 (1964), 51-58

TOPIC TAGS: solar eclipse, solar corona, polar ray, ray broadening, solar magnetic field

TRANSLATION: The photometric width d of polar rays in the corona is investigated as a function of the distance r from the center of the solar disc. The author investigates sun rays in the corona of 1954 (the photographs were taken with the aid of a 10-meter camera), and in the corona of 1900 (from reproductions). An analysis of the obtained results leads the author to the following conclusion: 1. The broadening of the polar rays occurs linearly for $r = (1-2)R_{\odot}$; for sun rays, at small distances, a power-law variation holds true. 2. The degree of broadening is

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ACCESSION NR: AR5004834

different even for rays from the corona of the same epoch. 3. On the average $d = d_0[2.0(r - 1) + 1]$, where d_0 -- width of the ray at the base. The theoretical broadening is calculated under the assumption that the boundaries of the rays are determined by the force lines of the dipole field. The observed broadening turns out to be larger than the theoretical value. The magnetic field introduced by H. Shimooda, to explain the high-latitude cutoff of the cosmic rays, is also considered. The corresponding analysis leads the author to the conclusion that at large distances the magnetic field should tend to become radial. If the intensity of the magnetic field at the sun's poles is ~ 3 G, then at a distance ~ 1 astronomic units from the sun it amounts to ~ 2--10^{-5} G. Bibliography, 10 titles.
G. Nikol'skiy.

SUB CODE: AA ENCL: 00

Card 2/2

L 34925-65

ACCESSION NR: AT5006121 S/0000/64/000/000/0167/0182

AUTHOR: Buldakov, L. A.

15
13+1

TITLE: Metabolism and biological effects of cesium-137 in sheep

SOURCE: Raspredeleniye, biologicheskoye deystviye, uskoreniye vyvedeniya radioaktivnykh izotopov (Distribution, biological effect, acceleration of the excretion of radioactive isotopes); sbornik rabot. Moscow, Izd-vo Meditsina, 1964, 167-182

TOPIC TAGS: cesium-137, radioisotope, radioactivity, tissue, bone, blood, muscle, liver, kidney, bone marrow

ABSTRACT: Cs^{137} administered orally to sheep (2.2 μc/24 hours) for 105 days was distributed uniformly in the viscera. Somewhat higher concentrations of the isotope were noted in muscle tissue and skin; lowest concentrations, in bones and bone marrow. The maximum Cs^{137} accumulation multiplicity factor by the 105th day of the experiment was 2.55, 0.89, 0.25, 1.93, and 4.54 for the muscles, liver, kidneys, skin, and viscera plus skin, respectively. The isotope was excreted with feces--11.04%, with urine--9.10%, and with milk--2.02% of the daily dose per kg of body weight. When administration of the isotope was halted, the activity of the excrement dropped between the 10th and 45th days to 1.83-3.51% (urine and feces) and to

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ACCESSION NR: AT5006121

0.251-0.69% (milk) of the daily dose. The rate of excretion followed the exponential law. The biological half-life of Cs^{137} from all the soft tissues was 10.4 days for 70%, and 68 days for 30% of the amount retained in the organism. In growing animals, the half-life of Cs^{137} from all the soft tissues was 24.4 days for 36%, and 49.5 days for 64% of the initial content of the isotope in the organism. Cesium was transmitted from the mother mainly during the first month of life of the baby lamb. During the period of intrauterine development, the concentration of cesium in the fetal tissues was almost 10 times lower than that in the mother's tissues. Oral administration of Cs^{137} (230 μc over 10 days, 2,000 μc over 10 days, and 2,000 μc at one time) failed to produce significant changes in the peripheral blood cells of the adult animals and their offspring. Very slight changes in the hemoglobin concentration (decrease from 64 to 39.4-46%) and in the leukocyte count (from 9,300 to 6,350 and from 7,820 to 6,060 in 1 mm^3) were noted in the sheep that received 2,000 μc of the isotope either at one time or over 10 days. Orig. art. has 2 figures, 13 tables.

ASSOCIATION: none

SUBMITTED: 10Apr64 ENCL: 00 SUB CODE: LS

NO REF SOV: 000 OTHER: 000

Card 2/2

L 34113-65 EWG(j)/EWT(m) GS

ACCESSION NR: AT5006122 S/0000/64/000/000/0183/0191

AUTHOR: Nifatov, A. P.; Buldakov, L. A. 18 B+1

TITLE: Biological effects of strontium-90, cesium-137, and promethium-147 after chronic oral administration of low doses of the isotopes 19

SOURCE: Raspredeleniye, biologicheskoye deystviye, uskoreniye vyvedeniya radioaktivnykh izotopov (Distribution, biological effect, acceleration of the excretion of radioactive isotopes); sbornik rabot. Moscow, Izd-vo Meditsina, 1964, 183-191

TOPIC TAGS: strontium-90, cesium-137, promethium-147, radioisotope, radioactivity, blood, viscera

ABSTRACT: Oral administration of 0.00051 and 0.012 μc/24 hours of Sr^{90}, 0.00124 μc/24 hours of Cs^{137}, and 0.0027 μc/24 hours of Pm^{147} to rats for almost two years had no significant effect on the average survival time, weight, peripheral blood, or rate of tumor formation in the rats. Although the overall number of tumors was the same in both the experimental animals and the controls, the spectrum of neoplasms was different. The experimental animals had more tumors of the adrenal cortex, testes, gastrointestinal tract, and generalized leukemias, a phenomenon not explained by the authors. Since the greater frequency of glandular tumors was not

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L 34113-65

ACCESSION NR: AT5006122

related to the dose or to local irradiation, the authors doubt that these neoplasms were the result of direct radiation injury or that they were the determining factor in the death of the animals. The main causes of death seemed to be various inflammatory processes in the lungs and gastrointestinal tract, periarteritis nodosa, cirrhosis of the liver, and nephrosclerosis. These diseases were equally common in the experimental and control animals. Orig. art. has 6 tables.

ASSOCIATION: none

SUBMITTED: 10Apr64 ENCL: 00 SUB CODE: LS

NO REF SOV: 000 OTHER: 000

Card 2/2

L 34139-65

ACCESSION NR: AT5006136 S/0000/64/000/000/0311/0315

AUTHOR: Buldakov, L. A.; Burov, N. I.; Ukhanova, V. A.

TITLE: Effect of food calcium on metabolism of strontium-90 in the fodder-milk link in cows

SOURCE: Raspredeleniye, biologicheskoye deystviye, uskoreniye vyvedeniya radioaktivnykh izotopov (Distribution, biological effect, acceleration of the excretion of radioactive isotopes); sbornik rabot. Moscow, Izd-vo Meditsina, 1964, 311-315

TOPIC TAGS: strontium-90, radioisotope, radioactivity, milk, calcium

ABSTRACT: During the summer the amount of Sr^{90} penetrating into milk from green fodder varies with the calcium in the ration and the extent of daily milking. With equal daily milking of cows kept on a diet with a low calcium content (oats--30 g of calcium daily) and with a high calcium content (vetch--70 g of calcium daily), 0.27 and 0.12% of the dose of strontium was excreted with one liter of milk, and 2.78 and 1.16% with the daily yield of milk. When the milking was considerably different, the excretion of Sr^{90} with one liter was somewhat higher in the low milkers (0.12-0.27%) than in the high milkers (0.10-0.23% of the daily dose). In terms of the daily yield, the excretion of Sr^{90} with milk was much higher in the

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L 34139-65

ACCESSION NR: AT5006136

good milkers (1.96-4.95%) than in the poor milkers (1.164-2.78%). The Sr^{90} discrimination factor in the fodder-milk link during the summer was 0.080 and 0.088 and it was not related to the extent of daily milking or to the amount of calcium in the fodder.

ASSOCIATION: none

SUBMITTED: 10Apr64 ENCL: 00 SUB CODE: LS

NO REF SOV: 000 OTHER: 000

Card 2/2

L 3200-66

ACCESSION NR: AP5009202 S/0241/65/010/003/0066/0072

AUTHOR: Buldakov, L. A.; Yerokhin, R. A.

TITLE: Strontium 90 metabolism in the organism of rats maintained on a calcium enriched diet

SOURCE: Meditsinskaya radiologiya, v. 10, no. 3, 1965, 66-72

TOPIC TAGS: rat, strontium 90, calcium, food, radioactive isotope, metabolism

ABSTRACT: A series of experiments was conducted on 229 male and female rats to determine the effect of a calcium enriched diet on strontium 90 deposits in skeletal bones, strontium 90 elimination rate, and strontium 90 transmitted to offspring. The animals, weighing 180-200 g, were maintained on a 2.4% or 1.4% calcium enriched diet and received strontium 90 daily in the form of a chloride solution (0.015 microcurie) introduced intraperitoneally for periods of 50 to 200 days. Observation period ranged from 64 to 256 days. Radioactivity of the skeletal bones and organs was measured after calcination on a beta unit with an end-window counter. Findings

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L 3200-66

ACCESSION NR: AP5009202 0

ASSOCIATION: None.

SUBMITTED: 20Apr64 ENCL: 00 SUB CODE: LS

NR REF SOV: 007 OTHER: 002

PC

Card 3/3

BULDAKOV, N.

Planning the operations of automotive transport organizations considering their aims. Avt.transp. 35 no.9:4 S '57. (MIRA 10:10)

1.Nachal'nik Kirovskoy gruzovoy avtotransportnoy kontory No.2.
(Transportation, Automotive)

BULDAKOV, S., gvardii mayor

Show the soldiers the operation of a gas mask canister. Voen. vest 43 no.1:115 Ja '64. (MIRA 17:1)

BULDAKOV, S., gvardii mayor

Activity in training. Voen. vest. 43 no.5:28-30 My '64.
(MIRA 17:6)

L 45158-66 EWT(1)/EWT(m)/T DJ/RO
ACC NR: AP6027117 (A) SOURCE CODE: UR/0018/66/000/005/0111/0111

AUTHOR: Buldakov, S.

33
B

ORG: none

TITLE: Grease for preventing fogging of gas-mask eyepieces

SOURCE: Voyennyy vestnik, no. 5, 1966, 111

TOPIC TAGS: gas mask, grease, gas mask eyepiece, gasproof clothing, chemical warfare

ABSTRACT: The author offers a formulation for a new grease preventing the formation of fog on the eyepieces of gas masks. The grease consists of 50—60 g of household soap blended with 30—40 g of glycerin, and 10—15 g of turpentine. A 4 x 4 cm flannel cloth is impregnated with about 0.5 g of this grease and stored in a box.

[GC]

SUB CODE: 06, 11, 15/ SUBM DATE: none/

Card 1/1

BULDAKOV V. A.

В. С. Половин

Современное состояние и перспективы применения телевидения в промышленности, науке и технике в СССР.

Н. Е. Кидесс

Разработка унифицированного телевизионного и звукового оборудования различного назначения для телевещания

Р. Е. Быков,
С. Б. Гуревич

Процессы накопления и коммутации в видиконе в переходном режиме.

Р. Е. Быков,
С. Б. Гуревич

О влиянии апертуры пучка на структуру потенциального рельефа в видиконе

11 июня

(с 10 до 16 часов)

В. А. Булдаков

Студийная камера цветного телевидения.

В. Н. Балетов

Аппаратура цветного телевидения для Московского телецентра

В. Н. Ефимкин

Совместимость системы цветного телевидения с одной поднесущей частотой, выполненной для стандартов ОИР и МККР

Г. Н. Соколов

Преобразование стандартов цветного телевидения

11 июня

(с 18 до 22 часов)

О. В. Еленевич-Чекан

Общий комплекс измерений в междугородных каналах цветного телевидения

Л. И. Шкурина,
Д. Л. Сударский

Прецизионные устройства цветного телевидения

А. Н. Исаев

Выбор равносигнального белого цвета для системы цветного и черно-белого телевидения

А. Г. Буренин,
В. М. Зусманович

Коррекция искажений цветов в цветном телевизионном изображении при передаче кинофильмов.

report submitted for the Centennial Meeting of the Scientific Technological Society of Radio Engineering and Electrical Communications im. A. S. Popov (VNORIE), Moscow, 8-12 June. 1959

BULDAKOV, V.A., inzh.

Color on the TV screen. Nauka i zhizn' 27 no.5:64 My '60.
(MIRA 13:6)

(Color television)

AUTHOR: Buldakov, V.V. SOV-11-58-9-2/14

TITLE: Structural Peculiarities of the Granite Massif Maytas (Northern Balkhash Region) and the Distribution of Some Rare Elements in It (Osobennosti stroyeniya granitnogo massiva Maytas (Severnoye Pribalkhash'ye) i raspredeleniye v nem nekotorykh redkikh elementov)

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geologicheskaya, 1958, Nr 9, pp 25-36 (USSR)

ABSTRACT: The granite massif Maytas, situated in the North Balkhash region is formed of different layers of effusive and sedimentary rocks, which can be divided into three strata: lower-sedimentary; middle-effusive; and upper-effusive sedimentary. The massif, forming an elongated unconforming intrusive body, is broken up by a system of fissures extending in all directions. These fissures appeared when the upper parts of the massif hardened. Some fissures are of radial direction and others of concentric direction. These concentric dislocations served as entrances for the magmatic material as well as for later magmatic solutions. Granites formed during these two periods are of three varieties - coarse grained biotites, medium and fine grained porphyritic leucocratic granites. The first two

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Structural Peculiarities of the Granite Massif Maytas (Northern Balkhash Region) and the Distribution of Some Rare Elements in It

granites are characteristic of the main intrusive phase and the last belongs to the secondary phase and is represented by vein granites. Different rare element ores were found in these granites. By spectral and chemical analyses some rules were established for these elements. The amount of molybdenum, tungsten and beryllium in the later leucocratic granites is much larger than in the earlier granites. All three elements were most frequently found in granites subjected to secondary transformations. It means that the highest concentration of these elements occurred in the late magmatic phase. In contrast to this, strontium and barium were generally found in the coarse grained granites of the early, main intrusive phase. The author also refers in this article to the work of the following geologists: V.F. Bespalov, N.G. Kassin, N.I. Nakovnik, M.P. Rusakov, A.A. Polkanov, N.A. Yeliseyev, I.P. Kushnarev and S.R. Nockolds, R.L. Mitchell and E.M. Anderson (England).

There are 2 maps and 10 references, 8 of which are Soviet and ? English.

SOV-11-58-9-2/14

Structural Peculiarities of the Granite Massif Maytas (Northern Balkhash Region) and the Distribution of Some Rare Elements in It

ASSOCIATION: Institut mineralogii, geokhimii i kristallokhimii redkikh elementov AN SSSR, Moskva (The Institute of Mineralogy, Geochemistry and Crystallochemistry of Rare Elements of the AS USSR, Moscow)

SUBMITTED: December 27, 1957

1. Geology--USSR 2. Granite--Chemical analysis 3. Granite--Spectra

Card 3/3

BULDAKOV, V.V.

Characteristics of metasomatic changes in the Maytas granite massif. Izv. vys. ucheb. zav.; geol. i razv. 2 no.6:27-42 Je '59 (MIRA 13:3)

1. Institut geokhimii, mineralogii i kristallokhimii redkikh elementov AN SSSR.
(Maytas massif (Kazakhstan--Granite)

BULDAKOV, V. V., Cand. Geol-Mineral. Sci. (diss) "Laws of Formation of Granitic Intrusion Maytas (Northern Balkhash Area) and Associated Post-magmatic Metasomatosis Phenomena," Moscow, 1961, 23 pp (Instit. of Mineral, Geochem. and Crystal Chem. of Rare Elements, Acad. of Sci. USSR, Moscow State Univ.) 200 copies (KL Supp 12-61, 258).

BULDAKOV, V.V.

About a case of the recrystallization of acid effusive rocks in the exocontact of a granite intrusion. Izv.vys.ucheb.zav.; geol.i razv. 3 no.2:64-71 F '60. (MIRA 15:5)

1. Institut geokhimii, mineralogii i kristallokhimii redkikh elementov AN SSSR
(Kounrad Region--Rocks, Crystalline and metamorphic)

SMIRNOV, Aleksandr Dmitriyevich; BULDAKOV, Vitaliy Vasil'yevich; VLASOV, K.A., glav.red.; LEONT'YEV, L.N., doktor geol.-miner. nauk, otv. red.; STRIGIN, V.M., red. izd-va; PRUSAKOVA, T.A., tekhn. red.; GUSEVA, A.F., tekhn. red.

[Intrusive complexes in the Eastern Sayan Mountains]Intruzivnye kompleksy Vostochnogo Saiana. Moskva, Izd-vo Akad. nauk SSSR, 1962. 120 p. (MIRA 16:2)

1. Chlen-korrespondent Akademii nauk SSSR (for Vlasov).
(Sayan Mountains—Rocks, Igneous)

SMIRNOV, Aleksandr Dmitriyevich; NEDUMOV, Igor' Borisovich;
BULDAKOV, Vitaliy Vladimirovich; VLASOV, K.A., glav. red.;
LEONT'YEV, L.N., doktor geol.-miner. nauk, otv. red.;
PLATOV, N.A., red. izd-va; VOLKOVA, V.V., tekhn. red.

[Riphean structures in the Eastern Sayan Mountains and the distribution of pegmatite zones in them] Rifeiskie struktury Vostochnogo Saiana i polozhenie v nikh pegmatitovykh polei. Moskva, Izd-vo AN SSSR, 1963. 152 p. (MIRA 16:7)

1. Chlen-korrespondent AN SSSR (for Vlasov).
(Sayan Mountains--Pegmatites)

28(1) SOV/118-59-4-19/25

AUTHORS: Demen't'yev, A.A. and Buldakov, Ye.F., Engineers

TITLE: The Mechanization of Casting and Forge Work Cleaning

PERIODICAL: Mekhanizatsiya i avtomatizatsiya proizvodstva, 1959, Nr 4, pp 52-56 (USSR)

ABSTRACT: Quartz sand blasting is the most common method of cleaning castings and forge work after welding or heat treatment. At many plants, metallic sand or shot is used instead of quartz sand. One plant has designed and built 3 sandblast chambers featuring automatic charging of sand. The sandblast chambers are placed on entresols at a height of 2.5 m. Through the latticed bottom, the sand pours into the inlet bowls of the sandblast apparatus. Another important innovation is the mechanization of a workshop for the cleaning of various welded parts with metallic sand. This workshop consists of 3 separated sand-blast chambers. The collecting of the used sand is carried out by means of elevators and worm conveyers.

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The Mechanization of Casting and Forge Work Cleaning

The used sand is either mechanically sifted or directly conveyed to the sand bunker. Until recently, cylindrical parts were cleaned, after welding and heat treatment, by hand using quartz sand. The recently introduced semi-automatic sandblast chamber has considerably raised labor productivity and improved working conditions. Two sandblast apparatuses under the chamber (both calculated for an air pressure of 5 to 6 atm.) provide 4 nozzles with sand. Simultaneously, 2 nozzles are working the outer surface and the remaining 2 nozzles the inner surface of the cylinder. In addition to the cleaning of parts with sand, the plant has introduced a method of cleaning with a blast of metal shot. At the same time, 2 powerful shot blasts are directed toward the parts to be cleaned. The used metal shot drops into a receiving vessel and is consequently conveyed to the shot mixer for repeated use. The installation cleans 3 tons of castings per shift. The cleaning of forge work is carried

The Mechanization of Casting and Forge Work Cleaning

out by a semi-automatic metal shot blast machine. This machine cleans up to 8 tons of forge work per hour. There are 10 diagrams.

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GAL'PERIN, E.A.; BULDAKOVA, A.A.; LIZGUNOVA, A.V.

Clinical aspects of the outbreak of influenza A_2 in January 1962.
Trudy TSIU 68:167-171 '64. (MIRA 18:5)

KORABEL'NIKOVA, N.I.; BULDAKOVA, A.L.

Intestinal microflora in chlortetracycline and vitamin therapy of dysentery. Antibiotiki 7 no.9:822-825 S '62. (MIRA 15:12)

1. Kafedra mikrobiologii (zav. - cheln-korrespondent AMN SSSR prof. Z.V.Yermol'yeva) TSentral'nogo instituta usovershenstvovaniya vrachey i 2-ya Gorodskaya klinicheskaya infektsionnaya bol'nitsa (glavnyy vrach A.M.Pyl'tsova).
(DYSENTERY) (CHLORTETRACYCLINE)
(VITAMIN THERAPY) (INTESTINES--MICROBIOLOGY)

BULDAKOVA, A. N.

Cand Biol Sci - (diss) "Comparative analysis of the role of light conditions on the growth and development of agricultural birds." Kiev, 1961. 13 pp; (Ministry of Higher and Secondary Specialist Education Ukrainian SSR, Kiev Order of Lenin State Univ imeni T. G. Shevchenko); 180 copies; free; (KL, 5-61 sup, 182)

BULDAKOVA, G. (g.Moskva)

Pine tar saved the situation. Mest.prom.i khud.promys. 3 no.1:31 Ja '62. (MIRA 15:2)
(Leather, Artificial)
(Plasticizers)

BULDAKOVA, R.I., red.; KUZNETSOVA, M.I., red.izd-va; MATVEYEVA, A.Ye., tekhn.red.

[Instructions 222-58 on the testing of vacuum-tube voltmeters at frequencies up to 300 mc.] Instruktsiia 222-58 po poverke lampovykh vol'tmetrov na chastotakh do 300 Mgts. Izd.ofitsial'noe. Moskva, Gos.izd-vo standartov, 1959. 11 p.
(MIRA 13:11)

1. Russia (1923- U.S.S.R.) Komitet standartov, mer i izmeritel'nykh priborov.
(Electron-tube voltmeter--Testing)

BULDAKOVA, R.I.; KIPARENKO, V.I.; SUKHOV, B.I., red.; KASHIRIN, A.G., tekhn. red.

[Equipment for voltage measurements at high and superhigh frequencies] Apparatura dlia izmereniia napriazheniia na vysokikh i sverkhvysokikh chastotakh. Moskva, Gos. izd-vo standartov, 1961. 61 p. (MIRA 15:3)
(Radio measurements) (Electronic measurements)

BULDAKOVA, T.A. (Irkutsk)

Practice for solving a problem in arithmetic. Mat. v shkole no.1: 70-71 Ja-F '56. (MLRA 9:4)
(Arithmetic--Problems, exercises, etc.)

SENOV, Petr Leonidovich; KUVSHINSKIY, M.N., red.; BUL'DYAYEV, N.A., tekhn.red.

[Textbook on pharmaceutical chemistry] Uchebnik farmatsevticheskoi khimii. Izd.5., perer. i dop. Moskva, Gos.izd-vo med. lit-ry, 1960. 458 p. (MIRA 13:8)
(CHEMISTRY, MEDICAL AND PHARMACEUTICAL)

MIKHAL'CHENKO, V.M.[Mykhal'chenko, V.M.]; MISNICHENKO, O.M.; MARCHENKO, T.I.; MIKHAYLOVA, M.Y.[Mykhailova, M.I.]; SHVED, M.P.; OSTAPENKO, M.G.[Ostapenko, M.H.]; BULDEY, I.A.; MARKIN, M.S., glav. red.; OSTAPENKO, M.G. [Ostapenko, M.H.], otv. za vyp.; MINEVICH, M.I.[Minevych, M.I.], tekhn. red.

[Soviet trade in the Ukrainian S.S.R.; statistical abstract] Radians'ka torhivlia v Ukrains'kii RSR; statystychnyi zbirnyk. Kyiv, Derzh. stat. vyd-vo, 1963. 318 p. (MIRA 16:9)

1. Ukraine. Statisticheskoye upravleniye. 2. Otdel statistiki torgovli TSentral'nogo statisticheskogo upravleniya pri sovete ministrov Ukr. SSR (for Mikhal'chenko, Misnichenko, Marchenko, Mikhaylova, Shved, Ostapenko, Buldey). 3. Nachal'nik TSentral'nogo statisticheskogo upravleniya Ukr.SSR (for Markin).
(Ukraine--Commerce) (Ukraine--Statistics)

BULDEY, V.

BULDEY, V., inzhener.

Hydromechanical sinking of a drainage well. Mast.ugl.3 no.10:23 O '54. (MLRA 7:12)
(Mine drainage)

1. BULDEY, V. R., ENG.

2. USSR (600)

3. Wells

4. Rapid sinking of shaft wells in loose soils. Gidr. i mel. 5 No. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, June 1953 Unclassified

BELDEI, V. P.

"Investigation of the Methods and Techniques of Underground Reclamation of Water-Surrounded Deposits." Cand Tech Sci, Leningrad Orders of Lenin and Labor Red Banner Mining Inst, Min Higher Education USSR, Leningrad, 1954. (KL, No 13, Mar 55)

SO: Sum. No. 670, 29 Sep 55-Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Insitituions (13)

BULDEY, V.R.

29(1) PHASE I BOOK EXPLOITATION SOV/2775

Akademiya nauk Ukrayins'koyi RSR. Instytut matematyky

Zastosuvannya metodu elektrohidrodynamichnykh analohiy do rozv"yazannya deyakykh tekhnichnykh zadach (Application of the Method of Electrohydrodynamic Analogy to the Solution of Various Engineering Problems) Kyyiv, Vyd-vo AN URSR, 1959. 160 p. 1,000 copies printed.

Ed. of Publishing House: T.K. Remennik; Tech. Ed.: O.O. Matviychuk; Editorial Board: P.F. Fil'chakov (Resp. Ed.), V.M. Ostapenko (Resp. Secretary), Yu.V. Blahoveshchens'kyy, Y.B. Pohrebys'kyy, and V.E. Shmans'kyy.

PURPOSE: This book is intended for scientific workers, engineers, Aspirants and students.

COVERAGE: This book is a collection of articles on the application of the electrohydrodynamic analogy method to the solution of various engineering problems. Among the topics discussed is the modelling of certain technical problems on resistance paper by the electrohydrodynamic analogy method. Special attention is given to the study of various problems of filtration, in both homogeneous and nonhomogeneous ground, problems of plane bending, heat engineering problems, modelling electro-osmotic waterlevel fall, and the conformal mapping problem. Problems of the physical and technical properties of resistance paper and the accuracy of the electrohydrodynamic analogy method are studied and the new, more universal model of the EGDA integrator is described. All the articles end with summaries in Russian and English.

TABLE OF CONTENTS:

BULDEY, V.R., kand. tekhn. nauk

Estimating the preliminary drainage of mining areas by means of electric models. Ugol' Ukr. 3 no.8:14-16 Ag '59.
(MIRA 12:12)
(Mine drainage--Electromechanical analogies)

BULDEY, V.R., kand.tekhn.nauk

Economic water-supply structures for livestock farms. Mekh. sil'. hosp. 11 no.12:21-22 D '60. (MIRA 13:12)
(Water supply, Rural) (Pumping machinery)

BULDEY, Vasiliy Romanovich, kand. tekhn. nauk; SOSNOVSKAYA, G.I., red.; ZELENKOVA, Ye.Ye., tekhn. red.

[Porous concrete water intakes] Poristobetonnye vodozabory. Kiev, Gos.izd-vo lit-ry po stroit. i arkhit. USSR, 1961. 60 p. (MIRA 14:11)

(Hydraulic engineering--Equipment and supplies)

BULDEY, Vasiliy Romanovich, kand. tekhn. nauk; SHAMANSKIY, Vladimir Yevtif'yevich, kand. fiziko-matem. nauk; KOLESNIK, N.S., red.; BABIL'CHANOVA, G.A., tekhn. red.

[Calculating drawdown with the help of electric models] Raschet vodoponizheniia pri pomoshchi elektricheskikh modelei. Kiev, Gos. izd-vo lit-ry po stroit. i arkhit. USSR, 1961. 95 p. (MIRA 15:1)

(Electromechanical analogies) (Water, Underground)

BULDEY, V.R., kand.tekhn.nauk

Casing artesian wells with asbestos cement pipes. Mekh.sil'.hosp. 13 no.12:20-24 D '62. (MIRA 16:1)
(Pipe, Asbestos-cement) (Artesian wells)

BULDOVICH, A.

Information service. Avt. transp. 43 no.8:51-52 Ag '65.
(MIRA 18:9)

L 2564-66 EWT(d)/EWT(l)/EWT(m)/EWP(w)/FCC EM/GW

ACCESSION NR: AT5024885 UR/2531/65/000/171/0062/0073

46
43
B+1

AUTHORS: Buldovskiy, G. S.; Reshchikova, A. A. 44,55 44,55

TITLE: Spatial distribution of orographic turbulence zones in mountainous and shore flight routes of Crimea

SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy, no. 171, 1965. Rezultaty issledovaniya atmosfernoy turbulentnosti na vertoletnykh trassakh (Results of the investigation of atmospheric turbulence on helicopter routes), 62-73

TOPIC TAGS: orography, helicopter, atmospheric turbulence/ LT 2 aircraft, MI 4 helicopter 44,55,12

ABSTRACT: Turbulence in mountainous and shore helicopter routes of Crimea has been studied by means of airplane LI-2 and helicopter MI-4 measurements, accompanied by ground aerological observations and weather balloons. The plane LI-2 was fitted with an electrometeorograph for recording the temperature, pressure, and humidity of the air. It was also equipped with a set of instruments registering vertical airplane overloading, integral of overloading, bank angle, pulsation of the temperature, and wind. In addition, careful visual observations

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were conducted throughout the flight. The method of investigation involved flights 25-30 km in length along the mountain range, on either side of the range, and at various altitudes and distances from the range. All of these flights were performed below the crest of the range so as to study the lower zones of intensive turbulence and to correlate them with the mountain topography. It was established that on the south shore of Crimea the maximum turbulence is always observed below the range crest. The intensity of the turbulence layer changes according to the range height. In general, the upper boundary of the turbulent layer exceeds the range height by 0.5-1 km. At a distance of 10-15 km out to sea the turbulence weakens. During northwestern winds on the windward northern slopes, in addition to the thermal bumping, there exists an orographic bumping resulting from the ruggedness of topography. Most intensive turbulence was observed within the 300-400-m layer about the range. The force of the turbulent layer increases towards the northeastern region of the Crimean range. During southwestern winds above the southern shores the observed turbulence is quite weak, though the winds may be strong. A strong bumping can be expected over the mountainous regions of Crimea during southwestern winds, even when the atmosphere is stable. In this case the bumping (of orographic origin) is caused by the spurs of the Crimean range, which run normal to the southwestern wind. Orig. art. has: 5 figures and 2 tables.

L 2564-66

ACCESSION NR: AT5024885 3

ASSOCIATION: TsAO 44,55

SUBMITTED: 00 ENCL: 00 SUB CODE: ES, AC

NO REF SOV: 005 OTHER: 000

Card 3/3

L 23367-66
ACC NR: AP6014004 SOURCE CODE: UR/0219/65/060/008/0102/0105

AUTHOR: Perevoshchikova, K. A.; Belousov, A. P. (Doctor of biological sciences); Bul'dyayeva, T. V.--Buldyaeva, T. V. 21 B

ORG: Biochemistry Laboratory/headed by A. P. Belousov, Doctor of biological sciences/, Institute of Oncology im. P. A. Gertsen/directed by Prof. A. N. Novikov, Doctor of medical sciences/, Moscow (Biokhimicheskaya laboratoriya Onkologicheskogo instituta)

TITLE: Effect of hepatic ribonucleic acid on tumor growth in experimental animals

SOURCE: Byulleten' eksperimental'noy biologii i meditsiny, v. 60, no. 8, 1965, 102-105

TOPIC TAGS: tumor, RNA, liver, rat, mouse

ABSTRACT: Ribonucleic acid was obtained from the livers of rats and mice by means of the modified Kirby phenol and Sherer methods. The acid was placed in physiological solution (3-4 milligrams in one milliliter) and mixed in a ratio of 5:1 with a suspension of M-1 sarcoma cells, Ehrlich's mouse ascitic tumor washed in the above solution, or rat ascitic hepatoma. An equal quantity of physiological solution was added in the case of controls. The mixture with the ribonucleic acid (RNA) (final concentration of the RNA equalled 2.5-3 milligrams in one milliliter) was incubated at room temperature for a period of 2 hours, or at a temperature of 4°C for a period of 18 hours. After incubation the suspension containing sarcoma M-1 was

 UDC: 616-006-085.739.6-092.9

L 23367-66

ACC NR: AP6014004

administered subcutaneously in a dose of one milliliter, and that containing rat ascitic hepatoma, in a similar dose intraperitoneally. The animals were sacrificed within 7-10 days after the inoculation and the tumors of the experimental and control groups were weighed. It was found that the RNA obtained by the Kirby phenol method in modification by G. P. Georgiyev had no effect on the growth of Ehrlich's ascitic tumor; the same was true also of rat sarcoma M-1 preliminarily incubated with RNA of normal livers. A slight tendency to inhibit the growth of rat ascitic hepatoma was noted. Further tests with RNA obtained by the Kirby phenol method modified by Vorob'yev established that the growth of rat sarcoma M-1 was inhibited in 57 to 93 percent of the animals. No definite results were obtained in experiments which sought to determine the effect of RNA obtained by the Kirby phenol method in Vorob'yev modification and the Sherer method on rat ascitic hepatoma. This paper was presented by A. I. Savitskiy, active member, AMN SSSR. Orig. art. has: 2 tables. [JPRS]

SUB CODE: 06 / SUBM DATE: 10Jan64 / ORIG REF: 003 / OTH REF: 005

Card 2/2 IC

L 39540-66 EWT(1)/EWA(h) GD
ACC NR: AP6007643 SOURCE CODE: UR/0141/66/009/001/0209/0211

AUTHOR: Borodovskiy, P. A.; Buldygin, A. F.

ORG: Institute of Semiconductor Physics, SO AN SSSR (Institut fiziki poluprovodnikov SO AN SSSR)

TITLE: Experimental investigation of the interaction of electrons with the TW field in a strophotron

SOURCE: IVUZ. Radiofizika, v. 9, no. 1, 1966, 209-211

TOPIC TAGS: electron tube, strophotron

ABSTRACT: An experimental strophotron tube included a 0.15×3-mm thorium-tungsten cathode, a 0.5-mm constantan reflector, a 2-mm molybdenum accelerator, and a movable kovar collector whose position could be controlled by an external solenoid; the interaction-space length could be adjusted within 20—145 mm. These experimental characteristics are reported: relative collector current vs. interaction-space length; output power and frequency vs. accelerating voltage; starting current, gain, and passband vs. interaction-space length; gain vs. input-signal power. It is found that the TW strophotron gain strongly depends on the current, frequency, and the interaction-space length. "The authors wish to thank A. I. Shchekotov for building the experimental tube." Orig. art. has: 5 figures and 4 formulas. [03]

SUB CODE: 09 / SUBM DATE: 06Jul65 / ORIG REF: 003 / ATD PRESS: 4225

Card 1/1 vmb UDC: 621.385.622

[redacted]ULDYREV, V. S.

"Nonstationary Diffraction of Sound Waves at a Membrane Cylindrical Shell"

paper presented at the 4th All-Union Confl on Acoustics, Moscow, 26 May - 2 Jun 58.

54-1-6/17

AUTHOR: Buldyrev, V. S.

TITLE: The Propagation of Modulated Oscillations (Rasprostraneniye modulirovannykh kolebaniy)

PERIODICAL: Vestnik Leningradskogo Universiteta Seriya Fiziki i Khimii (Nr 1), 1958, Nr 4,

ABSTRACT: The problem of the propagation of a modulated signal in an acoustic medium is investigated. In the theory concerning the propagation of radiowaves steady fields with the time dependence

$$e^{-i\omega t}$$

(Refs. 1, 2, 3 and a) are usually investigated. Recently, problems concerning the non-steady propagation of waves have been more frequently raised and solved (Refs. 4, 5, 6). The investigation of the field in a great distance from the front of disturbance is, however, connected with considerable difficulties. Hitherto these difficulties could be overcome only in a very small number of problems of the simplest kind.

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The Propagation of Modulated Oscillations 54-1-6/17

As far as the author knows, the characteristic features of the propagation of highfrequency oscillations, which are modulated according to the amplitude, have as yet not been investigated. In practice, however, such signals occur very frequently, and in numerous experiments it is just the envelop of high frequencies that is investigated. An exact determination of the modification of the envelop of high frequency in the propagation of the wave presents great difficulties. The solution of the problem is presented in form of an expansion in negative powers of frequency with the time-dependent coefficients. For the coefficients of expansion recursive formulae are given. It is shown that zero approximation as well as the first approximation for the simplest cases reproduces the shape of the given signal. In higher approximations she shape of the signal depends upon the path of the ray.
There are 1 figure, and 11 references, 7 of which are Slavic.

SUBMITTED: June 30, 1957

AVAILABLE: Library of Congress

Card 2/2 1. Oscillations-Propagation-Mathematical analysis

BULDYREV, V.S.; MOLOTKOV, I.A.

Nonstationary propagation of waves in homogeneous and isotropic media by cylindrical or spherical boundaries. Uch.zap. LGU no.246: 261-321 '58. (MIRA 12:2)

1. Leningradskiy gosudarstvennyy universitet.
(Wave motion, Theory of)

BULDYREV, V.S.

16(1) SOV/2660

PHASE I BOOK EXPLOITATION

Vsesoyuznyy matematicheskiy s"yezd. 3rd, Moscow, 1956

Trudy. t. 4: Kratkoye soderzhaniye sektsionnykh dokladov. Doklady inostrannykh uchenykh (Transactions of the 3rd All-Union Mathematical Congress in Moscow, vol. 4: Summary of Sectional Reports. Reports of Foreign Scientists) Moscow, Izd-vo AN SSSR, 1959. 247 p. 2,200 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Matematicheskiy institut.

Tech. Ed.: G.M. Shevchenko; Editorial Board: A.A. Abramov, V.G. Boltyanskiy, A.M. Vasil'yev, S.V. Medvedev, A.D. Myshkis, S.M. Nikol'skiy (Resp. Ed.), A.G. Postnikov, Yu. V. Prokhorov, K.A. Rybnikov, P. L. Ul'yanov, V.A. Uspenskiy, M.G. Chetayev, G. Ye. Shilov, and A.I. Shirshov.

PURPOSE: This book is intended for mathematicians and physicists.

COVERAGE: The book is Volume IV of the Transactions of the Third All-Union Mathematical Conference, held in June and July 1956. The book is divided into two main parts. The first part contains summaries of the papers presented by Soviet scientists at the Conference that were not included in the first two volumes. The second part contains the text of reports submitted to the editor by non-Soviet scientists. In those cases when the non-Soviet scientist did not submit a copy of his paper to the editor, previous publication of the paper was printed in a previous volume, reference is made to the appropriate volume. The papers cover various topics in number theory, both Soviet and non-Soviet, integral equations, function theory, algebra, differential and integral equations, mathematical functional analysis, probability theory, topology, mathematics, problems of mechanics and physics, computational mathematics, mathematical logic and the foundations of mathematics, and the history of mathematics.

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24(1) SOV/54 59-1-4/25

AUTHOR: Buldyrev, V. S.

TITLE: Unsteady Diffraction of Sound Waves on a Cylindrical Membrane Shell (Nestatsionarnaya difraktsiya zvukovykh voln na membrannoy tsilindricheskoy obolochke)

PERIODICAL: Vestnik Leningradskogo universiteta. Seriya fiziki i khimii, 1959, Nr 1, pp 30-42 (USSR)

ABSTRACT: In the reflection of oscillations on cylindrical or spherical surfaces disturbances arise before the front of usually reflected waves. These disturbances are the so-called head waves, which occur in a similar manner on nonplanar separating surfaces of two media. The investigation of these head waves is somewhat difficult. In this paper the author tried to give a mathematical representation of a head wave which is caused by the reflection of sound waves on a cylindrical surface. The head wave is studied in the immediate surroundings of the reflected wave front. In this case the cylindrical surface is assumed to be a membrane. This presupposes that the velocity potential $\Phi(r,0,t)$ of the particles satisfies the wave equation $\ddot{\Phi} - c_o^2 \Delta\Phi = 0$, where

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c_0 denotes the propagation velocity of the oscillation in the surrounding medium. The potential Φ for $t > 0$ is a sum of $\Phi_0 + \Phi_1$, where Φ_0 denotes the velocity potential of the plane wave hitting the cylindrical surface, Φ_1 the potential of disturbation produced by reflection of the waves on the surface. Φ_1 may also be represented by the equation $\ddot{\Phi}_1 - c_c^2 \Delta \Phi_1 = 0$ (3) with the initial conditions

$$\Phi_1 \Big|_{t=0} = \dot{\Phi}_1 \Big|_{t=0} = 0 \quad (4).$$ Equation (3) is solved with the conditions (4) and (11) by the method of closed integrals which has been devised in papers published by G. I Petrashen' and his cooperators (Refs 7, 8, 5). According to this method the potentials Φ_K are obtained as a series:

$$\Phi_K = \frac{c_0}{R}\left[R_0^{(k)}(\varrho, t) + 2\sum_{n=1}^{\infty} R_n^{(k)}(\varrho, t)n \cos n\theta\right], \quad k = 0, 1.$$

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Unsteady Diffraction of Sound Waves on a Cylindrical Membrane Shell

The expression contained in the function

$$R_n^{(k)}(\varrho,t) = \frac{e^{i\frac{\pi}{2}n}}{2\pi i}\int_{\sigma-i\infty}^{\sigma+i\infty} P_n^{(k)}(z)dz \qquad k = 0,1$$

under the integral is investigated in detail. By computing $P_n^{(k)}(z)$ in the pole z_n^* an expression is obtained which represents the head wave. Further, the author studied the wave field in the surroundings of the disturbation front. It resulted that in the first approximation the reflected wave is that of a wave reflected by a solid cylinder. The pressure of the head wave disturbation is also determined in parameters of the (solid) cylindrical surface. Further, it was shown that the order of discontinuity in the head wave front is reduced by 2.5 as compared with the front of the incident cylindrical wave. There are 5 figures and 13 references, 12 of which are Soviet.

SUBMITTED: May 26, 1958
Card 3/3

10.2000

24(1) 66730

AUTHOR: Buldyrev, V. S. SOV/20-129-2-15/66

TITLE: Investigation of Exact Solutions to Nonsteady Problems of Diffraction in the Neighborhood of Wave Fronts

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 129, Nr 2, pp 291-294 (USSR)

ABSTRACT: In the present paper it is proved that in the case of acoustically homogeneous media (separated by a circular cylindrical or spherical delimitation from one another) that on the basis of the results of three previous papers (Refs 1-3) a series may be developed according to powers of γ which converges in the neighborhood of the front and which in some cases represents entirely the field. In other cases the field is represented exactly except for one summand (an analytical function of coordinates and time). This furnishes the proof for the geometrical optical method in the group of problems investigated. The exact expressions for the wave field of a point source in a two-layered medium with circular cylindrical (plane problem) or spherical (axially-symmetrical problem) boundary of the media have the shape of infinite series to cos nθ and with respect to

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Legendre polynomial $P_n(\cos\theta)$. :

$$U(\tau,\varrho,\theta) = \mathrm{Re}\left\{\sum_{n=0}^{\infty} u_n(\tau,\varrho)\begin{bmatrix}\cos n\theta \\ P_n(\cos\theta)\end{bmatrix}\right\}.$$ In this case $\tau > 0$ denotes the dimensionless time; $\varrho > 0$ - the dimensionless distance of the point of observation from the axis of the cylindrical separating surface or from the center of the spherical separating surface. The angle θ is within the interval $[0,\pi]$. The functions $u_n(\tau,\varrho)$ are analytical except on the surfaces of the cylindrical or spherical waves: $\varrho = \tau + 1 - 2l$, $l = 0,1,2,\ldots$ In the second chapter of the present paper some lemmas are formulated which are based on the investigation of the analytical properties of the initially described wave field. In the third chapter the analytical properties of the initially written wave field are investigated. In the fourth chapter the singularity of the wave field at the fronts of the reflected or the deflected waves is removed. Finally the following is found:

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Investigation of Exact Solutions to Nonsteady Problems of Diffraction in the Neighborhood of Wave Fronts SOV/20-129-2-15/66

$$U(\tau, \varrho, \theta) = \mathrm{Re}\left[-\frac{\pi e^{-i\pi\beta}}{\sin \pi\beta} (i\gamma_K)^{\beta-1} \sum_{m=0}^{\infty} \frac{a_m^{(K)}(\tau,\varrho,\theta)}{\Gamma(m+\beta)} (i\gamma_K)^m + \varphi(\tau,\rho,\theta) \right].$$

The coefficients $a_m^{(K)}(\tau,\varrho,\theta)$ are calculated by successive application of the saddle point method for the calculation of the line integrals $I_n(\tau,\varrho)$. Also the determination of the radius of convergence of the infinite series is pointed out. The above written series may be transformed into a convergent series with respect to the powers of the distance from the front. The author thanks G. I. Petrashen' for the discussion of the problem. There are 7 references, 6 of which are Soviet.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A. A. Zhdanova (Leningrad State University imeni A. A. Zhdanov)

PRESENTED: July 9, 1959, by V. I. Smirnov, Academician

SUBMITTED: July 1, 1959

Card 3/3

36999
S/044/62/000/003/046/092
C111/C444

24.2300

AUTHOR: Buldyrev, V. S.

TITLE: The wave field in the neighborhood of the caustics in instationary diffraction problems in the case of spherical and cylindrical boundaries between the media

PERIODICAL: Referativnyy zhurnal, Matematika, no. 3, 1962, 77-78, abstract 3B332. ("Vopr. dinamich. teorii rasprostr. seysmich. voln. 5. L., Leningr. un-t", 1961, 210-232)

TEXT: In this article the following problem is investigated

$$\Delta u - \frac{1}{c^2(r)} u_{tt} = \delta(Q) a(t); \quad c(r) = \begin{cases} c_1, & r < R \\ c_2, & r > R \end{cases} \quad c_2 > c_1$$

$$u|_{t<0} = 0; \quad \left.\frac{\partial U}{\partial r}\right|_{r=R-0} = \left.\frac{\partial U}{\partial r}\right|_{r=R+0};$$

$$\mu_1 u|_{r=R-0} = \mu_2 u|_{r=R+0}$$

($\Delta = \frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2} + \frac{\partial^2}{\partial z^2}$, $\delta(Q)$ is a δ- function which is concentrated

The wave field in the neighborhood of the... in the point $Q = Q(x_0, y_0, z_0)$, $x_0^2 + y_0^2 + z_0^2 > R^2$, $r^2 = x^2 + y^2 + z^2$; c_1, c_2, R, μ_1, μ_2 are given positive numbers, a(t) is a given function). The rigorous solution of the problem can without any difficulty be written down as a series in terms of functions $P_n(\cos\theta)$ · ($P_n(x)$ is the Legendre polynomial, $\cos\theta = z/r$). If one uses the rigorous solution then one can show that all surfaces on which u is discontinuous can be obtained from the Fermat principle, i. e. as surface systems

$$t = \int_Q^M \frac{ds}{c(r)} \; ; \; (Q = Q(x_0, y_0, z_0); \quad M = M(x, y, z)),$$

where one integrates along the beam, i. e. along the curve, for which $\delta \int_Q^M \frac{ds}{c} = 0$. A geometrical investigation shows that in the domain $r > R$ the wave front which is formed by the beams which along the boundary $r = R$ are twice broken, possesses an edge of recurrence. The surface surrounded by this edge of recurrence is called caustic.

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S/044/62/000/003/046/092
The wave field in the neighborhood of the..C111/C444

The main contents of the paper consists of the explanation of the analytic character of the function u in the neighborhood of the caustic, if $a(t) = t^{\alpha}$. In the neighborhood of the caustic u is represented in the form

$$u = \sum_{n=0}^{\infty} c_n(r, t)\, P_n(\cos\theta) + \text{analytic function} \qquad (1)$$

where $c_n(r, t)$ are certain curve integrals which contain cylindric functions with high indices. Since u possesses the same singularities as the residue series

$$\sum_{n=n_o}^{\infty} c_n(r, t)\, P_n(\cos\theta),$$

of (1), n_o arbitrarily large, $c_n(r, t)$ and $P_n(\cos\theta)$ may be substituted by its asymptotic equivalent which holds for large n. The series

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The wave field in the neighborhood of the..
obtained this way can be summed up. The sum is expressed by adjoint Legendre functions with the index - 1/6. This permits to give a relatively simple closed expression for the "non-analytic part" of the function u. The paper ends with the consideration of the analgous plane problem.

[Abstracter's note: Complete translation.]

Card 4/4

BULDYREV, V.S.

Generalization of the passage method for the case of two closely situated saddle points. Vop. din. teor. raspr. seism. voln no.5: 153-168 '61. (MIRA 14:11)

(Integrals)

BULDYREV, V.S.

Wave field in the vicinity of a caustic in nonstationary diffraction problems in case of spherical and cylindrical interfaces. Vop. din. teor. raspr. seism. voln no.5:210-232 '61. (MIRA 14:11)
(Diffraction) (Waves)

85954

S/020/60/134/005/030/C35/XX
B019/B070

24.1200

AUTHORS: Buldyrev, V. S. and Molotkov, I. A.

TITLE: An Investigation of the Exact Solutions of Unsteady Diffraction Problems in the Vicinity of Sliding Fronts

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 134, No. 5, pp. 1051 - 1054

TEXT: The properties of an acoustic wave field $u(P, t)$ (P is a point of space, t the time) in the region of a geometric shadow has been studied by a selection of the nonanalytical parts, the shadow being produced in a two-component medium with cylindrical or spherical boundary. The sliding front consists of all points P for which the integral $\tau = \int_Q^P c^{-1} ds = 1$ holds. In the vicinity of the sliding front, a solution of the unsteady wave field is then given as $u(P,t) = \mathrm{Re}\left[\sum_{s=1}^{\infty} \sum_{n=m}^{\infty} T_s\left[i\nu(n)\right] + f(P, t)\right]$ (2). The asymptotic representation of $T_s(i\nu)$ for large $|\nu|$ in

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85954

An Investigation of the Exact Solutions of Unsteady Diffraction Problems in the Vicinity of Sliding Fronts

S/020/60/134/005/C30/C35/XX
B019/B070

the sector $|\arg\nu| < \pi/2$ is discussed, and the separation of the nonanalytic part of the series $\mathrm{Re}\sum_{n=m}^{\infty} T_s[i\nu(n)]$ (8) is considered.

$$u_s(P, t) = \frac{3}{2}\sum_{k=0}^{N} a_k^{(s)}\left[\varkappa_s(\gamma+\delta)\right]^{3\beta-3+k} W_{3\beta-2+k}(p_s) + e^{-2p_s/3} O(p_s^{5/2-3\beta-N}) \quad (12)$$

is obtained. Equation (12) describes the behavior of $u_s(P, t)$ in the vicinity of $\gamma=0$, and permits an approximate calculation to be made of $u(P, t)$ in the vicinity of the sliding front. In the last section, some formulas for the coefficients $a_k^{(s)}$ for various diffraction problems[16] are given. G. I. Petrashen and V. M. Babich are thanked for the discussion of the results. There are 8 references: 4 Soviet and 4 US.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova (Leningrad State University imeni A. A. Zhdanov)

PRESENTED: May 27, 1960, by V. I. Smirnov, Academician

SUBMITTED: April 21, 1960

Card 2/2

24.4400

39373
S/044/62/000/006/002/127
B112/B104

AUTHOR: Buldyrev, V. S.

TITLE: Generalization of the method of "passing" for the case of two neighboring saddle points

PERIODICAL: Referativnyy zhurnal. Matematika, no. 6, 1962, 5, abstract 6B20 (Sb. "Vopr. dinamich. teorii rasprostr. seysmich. voln". 5. L., Leningr. un-t, 1961, 153 - 168)

TEXT: The integral $J(p, \delta) = \int_1 F(z)e^{pf(\delta, z)}dz$ is considered, where $f(\delta, z)$ has two neighboring saddle points z_1 and z_2, which coincide when $\delta = 0$. It is suggested that $f(\delta, z)$ be expanded in a series either in the neighborhood of a point where $f''_{z^2}(\delta, z)$ is equal to zero or in the neighborhood of a saddle point. Asymptotic expansions of the integral in a power series of $p^{-1/3}$ can thus be obtained. [Abstracter's note: Complete translation.]

Card 1/1

BULDYREV, V.S.; YANSON, Z.A.

Propagation of interference SH waves in an elastic spherical layer. Part 1. Izv.AN SSSR. Ser.geofiz. no.12:1764-1771 '62.
(MIRA 16:2)

1. Akademiya nauk SSSR, Leningradskoye otdelneiye Matematicheskogo instituta imeni V.A. Steklova.
(Seismic waves)

BULDYREV, V.S.; YANSON, Z.A.

Propagation of interference SH waves in an elastic spherical layer. Pt.2. Izv. AN SSSR. Ser.geofiz. no.1:76-89 Ja '63. (MIRA 16:2)

1. Leningradskoye otdeleniye Matematicheskogo instituta im. V.A. Steklova AN SSSR.

(Seismic waves)

BULDYREV, V.S.; LANIN, A.I. (Leningrad)

"On the analysis of the interferential wave field near the surface of an elastic sphere"

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 January - 5 February 1964

L 54778-65

ACCESSION NR: AT5013924 UR/0000/64/000/000/0021/0022

AUTHOR: Buldyrev, V. S.; Fradkin, E. Ye.

TITLE: Some problems of the open resonator theory

SOURCE: Vsesoyuznyy simpozium po difraktsii voln, 3rd, Tbilisi, 1964. Referaty dokladov. Moscow, 1964, 21-22

TOPIC TAGS: open resonator theory, resonator wave separation, open resonator scalar problem, resonator wave number spectrum, spherical mirror open resonator

ABSTRACT: This note reports briefly that the paper contributed to the symposium: (1) discussed the boundary problem related to the electromagnetic field in an open resonator with a source within the resonator, Leontovich boundary conditions at the resonator's mirrors, and radiation conditions at infinity. The authors showed for which resonator geometry one can separate the TM from the TE waves and established the inhomogeneous scalar problems for the corresponding Hertz vector components under Sommerfeld radiation and appropriate boundary conditions. This all resulted in an approximate system of two inhomogeneous integral equations for the distribution of the field over the interior surfaces of mirror-resonators. The corresponding homogeneous system may be called the open resonator system of integral equations.

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L 54778-65

ACCESSION NR: AT5013924

$$2\pi u_i(M_i) = \sum_{j=1}^{2} \int_{\sigma_j} \left(ikp_j \frac{e^{ikR_{ij}}}{R_{ij}} - \frac{\partial}{\partial n} \frac{e^{ikR_{ij}}}{R_{ij}} \right) u_j(N_j)\, dS \quad (i = 1,2), \qquad (1)$$

For ideal mirrors and with certain approximations, Equation (1) coincides with the integral equations of Fox and Lee. (2) The paper further showed how one can obtain the spectrum of the complex values of wave numbers from the spectrum of eigenvalues of (1); and (3) discussed the integral equations of open optical resonators with spherical mirrors in the Fox and Lee approximation. The combination of geometric parameters determining the complex wave numbers was established from the symmetry properties of these equations. The values of wave numbers determining the diffraction losses for best Q-factor types of resonator oscillations are estimated for certain types of resonators. Orig. art. has: 3 formulas.

ASSOCIATION: none

SUBMITTED: 09Sep64 ENCL: 00 SUB CODE: OP

NO REF SOV: 000 OTHER: 000

Card 2/2

BUL'GREV, V.S. (Leningrad)

Green's function in the problem of diffraction on a transparent circular cylinder. Part 1. Zhur. vych. mat. i mat. fiz. [illegible] (suppl.):275-286 '64.

Diffraction of waves on a transparent cone. Ibid.:287-[illegible]

(MIRA 18:2)

L 13650-65 EWA(k)/EWT(1)/EEC(k)-2/T/EEC(b)-2/EWP(k)/EWA(m)-2 Po-4/Pf-4/
Pi-4 IJP(c)/ASD(d)/BSD/AFWL/SSD/AFETR/ASD(a)-5/RAEM(a)/ESD(dp)/ESD(gs)/ESD(t)
ACCESSION NR: AP4047179 JHB/WG S/0051/64/017/004/0583/0596

AUTHORS: Buldy*rev, V. S.; Fradkin, E. Ye.

TITLE: Integral equations of open cavities

SOURCE: Optika i spektroskopiya, v. 17, no. 4, 1964, 583-596

TOPIC TAGS: laser, iraser, laser cavity, confocal cavity, open cavity

ABSTRACT: In contrast to the equations derived by A. G. Fox and T. Li (Bell System Techn. J. v. 40, 453, 1961) on the basis of the Fresnel principle, which is not directly connected with the electromagnetic field distribution, the authors start from Maxwell's equations and the Leontovich boundary conditions and obtain the integral equations for the distribution of two independent components of the Hertz vector on the reflecting surface of open cavities used in optical and infrared lasers. By separating the corresponding boundary

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L 13650-65
ACCESSION NR: AP4047179

conditions, it is shown that the TM and TE modes can exist independently in the cavity, so that incidence of one mode cannot give rise to the other. The integral equations for the optical laser are then obtained by superposition, and it is shown that the results of Fox and Li are valid only in the case of an ideal cavity (perfectly reflecting identical mirrors). A method for obtaining the natural frequencies and Q-values of the open cavity is also presented. A confocal cylindrical cavity is analyzed by way of an example. "The author thanks A. M. Prokhorov, at whose advice he considered the cylindrical confocal cavity, for a useful discussion." Orig. art. has: 6 figures and 33 formulas.

ASSOCIATION: None

SUBMITTED: 02Jul63 ENCL: 00

SUB CODE: EC, MA NR REF SOV: 005 OTHER: 005

Card 2/2

I 00817-66 EWT(d) IJP(c)

ACCESSION NR: AP5020824 UR/0020/65/163/004/0853/0856

AUTHOR: Buldyrev, V. S.

TITLE: Short wave asymptotic eigenfunctions of a Helmholtz equation

SOURCE: AN SSSR. Doklady, v. 163, no. 4, 1965, 853-856

TOPIC TAGS: eigenfunction, eigenvalue, asymptotic solution, asymptotic stability, Helmholtz equation

ABSTRACT: The method of parabolic equations was used to find the asymptotic formulae for the eigenvalues $k_{p,q}$ and the eigenfunctions $U_{p,q}(x,y)$ of the equation

$$\Delta U + k^2 U = 0, \quad U|_S = 0 \quad (\partial U/\partial n|_S = 0),$$

where S is a closed, smooth, convex contour bounding the plane region D. The stability of the solution is discussed first for two cases: when the rays of the above system are close to the contour S and when they are close to the minimum diameter of the domain D. The problem for both cases is shown to be stable within the first approximation. The solution of the first case is expressed in the form

$$U(x,y) = \mathrm{Re}\, e^{iks} W(n,s,k),$$

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where the function W satisfies the conditions

$$W(0, s; k) = 0 \ (\text{or } \partial W / \partial n|_{n=0} = 0),$$
$$e^{ikL} W(n, s + L; k) = W(n, s; k).$$

The corresponding eigenfunctions of the equation are calculated to yield

$$U_{p,q} = \frac{A}{\rho^{1/6}(s)} v\left[t_p - \frac{2}{\rho^{1/6}(s)}\left(\frac{k_{p,q}}{2}\right)^{1/6} n\right] \times$$
$$\times \cos\left\{k_{p,q} s + t_p \left(\frac{k_{p,q}}{2}\right)^{1/6} \int_0^s \rho^{-1/6}(t)\, dt + \frac{1}{6} \frac{d \ln \rho(s)}{ds} k_{p,q} n^3\right\}.$$

Similarly, for case two, the W-function satisfies the conditions

$$U|_{\xi=\xi_1} = U|_{\xi=\xi_2} = 0 \quad (\text{or } \partial U / \partial \xi|_{\xi=\xi_1} = \partial U / \partial \xi|_{\xi=\xi_2} = 0)$$

with the corresponding eigenfunctions

$$U_{p,q} = A \exp\left[-\frac{k_{p,q} a}{2} \sin^2 \eta\right] H_q\left(\sqrt{k_{p,q} a} \sin \eta\right) \operatorname{ch}^{-1/2} \xi \times$$
$$\times \begin{matrix}\cos \\ \sin\end{matrix} \{k_{p,q} a \operatorname{sh} \xi - (q + 1/2) \operatorname{arc\,sin\,th} \xi - 1/2 \varphi_{p,q}\};$$

$$\varphi_{p,q} = \frac{2d(\rho_1 - \rho_2)}{4d - \rho_1 - \rho_2} k_{p,q} - (q + 1/2) \operatorname{arc\,sin}\left[(\rho_1 - \rho_2) \sqrt{\frac{2d(\rho_1 + \rho_2 - 2d)}{\rho_1 \rho_2}}\right].$$

L 00817-66
ACCESSION NR: AP5020824

2

Orig. art. has: 8 equations.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A. A. Zhdanova (Leningrad State University)

55

SUBMITTED: 20Jan65 ENCL: 00 SUB CODE: MA

NO REF SOV: 005 OTHER: 001

Card 3/3

L 29335-66 EWT(d)/EWT(l)/T IJP(c) GG/WW

ACC NR: AR6004027 SOURCE CODE: UR/0044/65/000/009/B061/B061

AUTHOR: Buldyrev, V. S. 31 B

TITLE: Study of the Green function in a problem of diffraction on a transparent cylinder. I.

SOURCE: Ref. zh. Matematika, Abs. 9B300

REF SOURCE: Sb. Chislen. metody resheniya differents. i integral'n. uravneniy i kvadraturn. formuly. M., Nauka, 1964, 275-286

TOPIC TAGS: ~~mathematics, motion equation, solid dynamics,~~ refractive index, GREEN FUNCTION ~~light diffraction~~ LIGHT DIFFRACTION

ABSTRACT: The Green function was studied as applied to the problem of diffraction on a transparent cylinder with a relative refractive index $n<1$. The exact solution of the problem which can be presented in the form of an infinite series, is transposed into a contour integral which is investigated in detail in various regions. Expressions representing waves which underwent a various number of reflections inside the cylinder are separated. V. Kravtsov.

SUB CODE: 12, 20 SUBM DATE: none

Card 1/1 CC UDC: 517.9:535.4

BULDYREV, V.S.

Asymptotic behavior of eigenfunctions in the Helmholtz equation for plane convex domains. Vest.LGU 20 no.22:38-51 '65. (MIRA 18:12)

L 34409-66 EWT(1) IJP(c) WW/GG

ACC NR: AP6015436 SOURCE CODE: UR/0051/66/020/005/0905/0908

AUTHOR: Buldyrev, V. S.; Popov, M. M.

ORG: none

TITLE: Use of radial method for the calculation of the normal modes of multimirror resonators

SOURCE: Optika i spektroskopiya, v. 20, no. 5, 1966, 905-908

TOPIC TAGS: vibration frequency, resonator, light reflection

ABSTRACT: It is shown that the normal modes of vibrations concentrated around the axis of a multimirror resonator may be found by using a radial method applied to the family of rays which arises to a first approximation near the axis of the resonator as a result of multiple reflections. A two-dimensional and a three-dimensional resonator are discussed, and the theory is illustrated with two examples, one involving a triangular resonator; the other a parallelogram. Formulas for the natural modes are derived in both cases. Authors are grateful to E. Ye. Fradkin for the proposed topic and helpful discussions. Orig. art. has: 1 figure and 7 formulas.

SUB CODE: 20/ SUBM DATE: 02Jul65/ ORIG REF: 001/ OTH REF: 001

UDC: 621.375.9:535.001.1

Card 1/1

ACC NR: AT7006688 SOURCE CODE: UR/2517/66/092/000/0147/0155

AUTHORS: Lanin, A. I.; Buldyrev, V. S.

ORG: none

TITLE: On a study of the reflected field in the problem of diffraction by a cylinder with a relative refractive index $n < 1$

SOURCE: AN SSSR. Matematicheskiy institut. Trudy, v. 92, 1966. Krayevyye zadachi matematicheskoy fiziki (Boundary value problems of mathematical physics), no. 4, 147-155

TOPIC TAGS: cylindric wave, shock wave diffraction, Bessel function, analytic function, Green function, Reynolds number

ABSTRACT: The diffraction of a cylindrical wave by a transparent cylinder with $r \leq a$ and with a relative refractive index $n < 1$ is examined. The formation of the head wave and an accurate solution of the diffraction problem were described earlier by V. S. Buldyrev (Issledovaniye funktsii Grina v zadache difraktsii na prozrachnon tsilindre s otnositel'nym pokazatelem prelomleniya, men'shim yedinitsy. Chislennyye metody resheniya differentsial'nykh i integral'nykh uravneniy i kvadraturnyye formuly. Izd. Nauka, M., 1964). The wave field $U(r, \vartheta)$ for two regions A and B ($0 \leqslant \vartheta \leqslant \vartheta_0$ and $\vartheta_0 < \vartheta \leqslant \pi$, respectively):

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ACC NR: AT7006688

$$U = S_0 + S_1 + S_e + \sum_{l=1}^{\infty}\left\{\sum_{m=0}^{M-1}(s_{lm}^{+} + s_{lm}^{-}) + S_{lM}^{+} + S_{lM}^{-}\right\}$$

$$U = S + S_e + \sum_{m=0}^{M-1} s_{0m}^{+} + S_{0M}^{+} + \sum_{l=1}^{\infty}\left\{\sum_{m=0}^{M-1}(s_{lm}^{+} + s_{lm}^{-}) + S_{lM}^{+} + S_{lM}^{-}\right\}.$$

The incident and reflected wave in region A is examined, and so are the incident reflected wave and the slip waves in region B. Orig. art. has: 27 formulas and 5 diagrams.

SUB CODE: 20 / SUBM DATE: none/ ORIG REF: 002

Card 2/2

28698
S/021/61/000/003/001/013
D274/D301

16 4600 16.6500

AUTHOR: Buledza, A.V.

TITLE: On accelerating the convergence of iterative processes in an approximate solution of linear operator equations

PERIODICAL: Akademiya nauk UkrSSR. Dopovidi, no. 3, 1961, 265-269

TEXT: The equation

$$Ax = y, \qquad (1)$$

is given in Hilbert space H, where A is a linear operator which maps H into itself; the spectrum S_A belongs to the segment [m,M] of the real axis. Parameters a_i and real functions $\varphi_i(\rho)$ (i=1,2,..., q), defined and continuous on [m,M], are given. Taking (in space H) any $x_0, x_1, \ldots, x_{q-1}$, one constructs for the solution of (1) the iterative process

$$x_m = \sum_{i=1}^{q} [a_i x_{m-i} + \varphi_i(A)(Ax_{m-i} - y)]. \qquad (2)$$

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On accelerating the convergence...

Setting $v_m = x_m - x_{m-1}$, one obtains by Eq. (2):

$$v_m = \sum_{i=1}^{q} [a_i + \varphi_i(A)\, A]\, v_{m-1}. \qquad (3)$$

The operator U is introduced, which maps the vector-function $V_{m-1} = (v_{m-q}, v_{m-q+1}, \ldots, v_{m-1})$ into V_m; hence

$$UV_{m-1} = V_m. \qquad (4)$$

A lemma is stated involving the eigenfunctions of the operators A and U, and the eigenvalues λ_s of U, related to the eigenvalues ρ of A, by equation

$$\lambda_s^q - \sum_{i=1}^{q} [a + \varphi_i(\rho)\rho]\lambda_s^{q-i} = 0, \qquad (5)$$

Theorem: In order that the iterative process (2) should converge for any y and initial approximations $x_o, x_1, \ldots, x_{q-1}$, it is neces-

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On accelerating the convergence...

sary and sufficient that

$$1) \sum_{i=1}^{q} a_i = 1,$$

$$2) \max_{\rho \in S_A} |\lambda_s| < 1$$

where λ_s are the solutions of Eq. (5). If x_q is the first approximate solution of Eq. (1), then the (m+2)-th approximation is

$$x_{q+1+m} = x_{q+k} + v_{q+1+k} + v_{q+1+k+1} + \dots + v_{q+1+m}, \qquad (6)$$

where $v_{q+j} = x_{q+j} - x_{q+j-1}$. If the conditions of the theorem are satisfied, series (6) converges with the same speed as the geometric series with denominator

$$\gamma = \max_{S_A} |\lambda_s| < 1.$$

Passing to the limit in Eq. (6) for $m \to \infty$, one obtains

Card 3/7

On accelerating the convergence...

$$||x - x_{q+k}|| \leqslant \frac{\gamma^k}{1-\gamma} ||v_{q+1}||. \qquad (7)$$

By this theorem, and by appropriate choice of a_i and of $\varphi_i(\rho)$, it is possible to construct an iterative process with faster convergence. As an example, Fredholm's integral equation of the second kind:

$$\int_a^b K(x,s)\varphi(s)ds - \mu\varphi(x) = f(x). \qquad (8)$$

is considered. Setting

$$K\varphi = \int_a^b K(x,s)\varphi(s)ds, \qquad (9)$$

one obtains

$$A\varphi = f, \qquad (10)$$

where

$$A = K - \mu E. \qquad (11)$$

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On accelerating the convergence...

Eq. (10) can be solved by the method of successive approximations, if

$$|\mu| > B = \left\{ \int_a^b \int_a^b K^2(x,s)\,dx\,ds \right\}^{\frac{1}{2}}. \qquad (12)$$

Assuming that (12) is not satisfied, i.e.

$$|\mu| < B, \qquad (13)$$

one constructs a converging process of successive approximations by setting, in Eq. (2), $q = 1$, $a_1 = 1$, $\varphi_1(A) = b_1 A$, b_1 being some constant. Hence

$$\varphi_m = \varphi_{m-1} + b_1(K - \mu E)^2 \varphi_{m-1} + F, \qquad (14)$$

where

$$F = - b_1(K - \mu E)f.$$

For $b_1 = - 2/\sigma$ (where $\sigma > \max_{\rho \in S_K} (\rho - \mu)^2$), iterative process (14)

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On accelerating the convergence...

is a particular case to which the above theorem applies. Assuming

$$M = \max_{\rho \in S_K} (\rho - \mu)^2, \quad m = \min_{\rho \in S_K} (\rho - \mu)^2$$

as known, and setting

$$q = 2, \quad a_1 = 1 - a^*, \quad a_2 = a^* = \frac{3\alpha - 1}{2(3\alpha + 1)}, \quad \varphi_1(A) = cA = -\frac{3}{M(3\alpha + 1)} A,$$

$$\varphi_2(A) = 0$$

(where $\alpha = m/M$), one obtains for the solution of Eq. (8) the iterative process

$$\varphi_m(x) = \varphi_{m-1}(x) + a^* [\varphi_{m-2}(x) - \varphi_{m-1}(x)] +$$

$$+ c \left[\int_a^b K(x,s)ds \int_a^b K(x,t)\varphi_{m-1}(t)dt - 2\mu \int_a^b K(x,s)\varphi_{m-1}(s)ds + \right.$$

$$\left. + \mu^2 \varphi_{m-1}(x) \right] + F(x), \qquad (16)$$

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On accelerating the convergence...

where

$$F(x) = -c\left[\int_a^b K(x,s)f(s)ds - \mu f(x)\right],$$

for which

$$\max_{\rho \in S_K} |\lambda_s| = \begin{cases} \frac{1-3\alpha}{1+3\alpha} \text{ where } \alpha \leqslant \frac{1}{9} \\ \frac{1}{2} \text{ where } \alpha \geqslant \frac{1}{9} \end{cases}$$

There are 3 Soviet-bloc references.

ASSOCIATION: Kyyivs'kyy derzhuniversytet im. T.G. Shevchenka (Kyyiv State University im. T.G. Shevchenko)

PRESENTED: by Academician Y.Z. Shtokalo, AS UkrSSR

SUBMITTED: May 10, 1960

Card 7/7

1/2 1500

S/044/62/000/004/086/099
C111/C222

AUTHOR: Buledza, A. V.

TITLE: On the stability of the algorithms of successive approximations when solving systems of linear algebraic equations

PERIODICAL: Referativnyy zhurnal, Matematika, no. 4, 1962, 30, abstract 4V172. ("Dokl. i soobshch. Uzhgorodsk. un-t. Ser. fiz.-matem. n.," 1961, no. 4, 131-132)

TEXT: The author defines the concepts of the stable real approximation solution x_m^* and the stable real iteration process for a linear system of algebraic equations. He also formulates conditions for the stability of a real iteration process; an estimate for the iteration process is given. In addition, the number of digits s necessary to obtain a prescribed degree of accuracy of the real approximation solution for the system is estimated.

[Abstracter's note: Complete translation.]

Card 1/1

33748
S/021/62/000/002/002/010
D299/D304

16.4400

AUTHOR: Buledza, A. V.

TITLE: On improving the estimate of the method of fastest diminishing

PERIODICAL: Akdemiya nauk UkrRSR. Dopovidi. no. 2, 1962, 150-152

TEXT: The equation

$$Ax = y \qquad (1)$$

is considered, with linear self-conjugate and positive operator A in the Hilbert space H (which is assumed as real); the operator has the bounds m and M. The method of fastest diminishing used in solving Eq. (1) consists in constructing a sequence of elements $\{x_n^{(p)}\}$ which minimizes the functional

$$F(x) = (Ax,x) - 2(x,y) \qquad (2)$$

Card 1/4